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ORAL PRESENTATION

Workflow ın a radiotherapy department: Producing an applicable archive system in TPS for patient RT plans

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Abstract

Workflow in a radiotherapy (RT) department, is a lot more complex than in a diagnostic radiology department. Tools to organize diagnostic workflow electronically are readily available based on three major components. They are 1. scheduling for managing patient appointments based on digital imaging and communication in medicine (DICOM) worklist, 2. a PACS storage of DICOM images, and 3. the RIS for managing/storing/distributing reports. In radiotherapy, typically, a series of more or less invasive procedures have to be planned, performed, and documented. Scheduling is more complex due to the need for the patient to undergo a defined series of procedures that have to be performed in a certain timely sequence. The basis for treatment planning is typically a Computed tomography (CT) data set. These data are further manipulated in the process. DICOM-RT elements such as RT structure set (organ/target structures), RT plan, and RT dose (plan data and dose information) are generated typically in a dedicated treatment planning system (TPS) and have to be unequivocally linked to the basic CT image data and, finally, stored for long periods. Sometimes new treatment plans, etc. with new CT data sets may be acquired or new treatment plans may be generated on initially acquired CTs. By using the TPS, the radiotherapy plans of patients are generated. Finally, the actual plans are approved electronically by the doctors. The large number of treatment plans produced in the TPS limits the available disk capacities on the computer. Due to the slowdown of the system, the plans were considered to replace the inactive treatment plans from the system so these can be used again. So this will prevent the system from reducing its speed. In line with these needs, it is aimed to prepare an archive program to meet the backup/restore processes on the Monaco Treatment Planning Systems.

Keywords: Workflow in Radiotherapy, Treatment Planning Systems, Archive Program